A Colon Cancer Prevention Program for Nova Scotia

Dr. Bernard Badley,
Medical Director

Why a new program?

The Atlantic region has the highest incidence of colon cancer in Canada

In Nova Scotia

More than 800 new cases of colon cancer per year

It is the 2nd highest cause of death from cancer

Saint-Jacques N *et al.* 2006. *Understanding Cancer in Nova Scotia: 2000 – 2004.* Surveillance and Epidemiology Unit, *Cancer Care Nova Scotia.*

Canadians have a 1 in 20 chance of developing colon cancer.

There are some people, however, in whom the risk is increased.

This is **Mary**

This is **Mary**

Mary is 42 years old and

has no bowel symptoms

This is **Mary**

Mary is 42 years old and

has no bowel symptoms

But her mother had colon cancer when she was 56

This is **Jane**

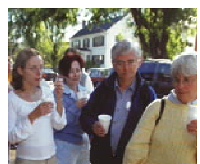
This is **Jane**

She is 28 years old

This is **Jane**

She is 28 years old

Jane has had ulcerative colitis since she was 16

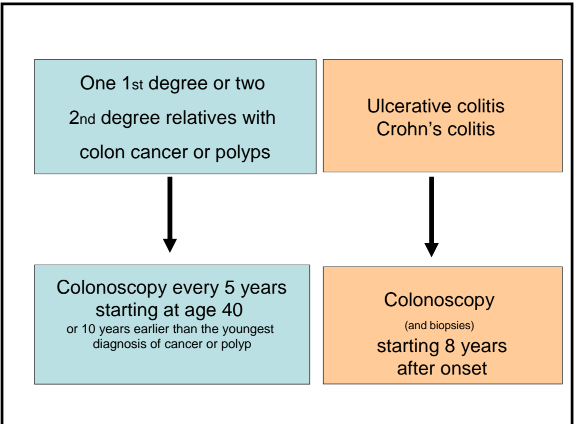


Both Mary and Jane are at ***increased risk*** *of developing colon cancer.*

People with an increased risk for colon cancer are those with:

- ***Family history of colon cancer***
  (one 1st degree or two 2nd degree relatives)
- ***Longstanding ulcerative or Crohn's colitis***
- ***Previous colon cancer or adenomatous polyps***

These people should enter a surveillance program that follows specific guidelines



This is **Alex**

This is **Alex**

Alex's elderly parents are alive and well in Cape Breton

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He feels fine

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Alex's elderly parents are alive and well in Cape Breton

He feels fine

He's looking forward to the golf season

This is **Alex**

Alex's elderly parents are alive and well in Cape Breton

He feels fine

He's looking forward to the golf season

Alex doesn't know it – but he has colon cancer

Alex also doesn't know …..

*that the major risk factor for colon cancer is **AGE** – just being **MORE THAN 50 YEARS OLD***

Alex also doesn't know …..

*that the major risk factor for colon cancer is **AGE** – just being **MORE THAN 50 YEARS OLD***

*that 80% of people with colon cancer are just like him – they have **NO FAMILY HISTORY** of colon cancer*

Cancer Care Nova Scotia

Alex also doesn't know …..

*that the major risk factor for colon cancer is **AGE** – just being **MORE THAN 50 YEARS OLD***

*that 80% of people with colon cancer are just like him – they have **NO FAMILY HISTORY** of colon cancer*

that colon cancer may cause NO SYMPTOMS until it is far advanced

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People who are at average risk for colon cancer are those who:

- *have no bowel symptoms*
- *are aged between 50 and 74*
- *have no family history of colon cancer*
- *do not have longstanding colitis*

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People who are at <u>average</u> risk for colon cancer are those who:

- *have no bowel symptoms*
- *are aged between 50 and 74*
- *have no family history of colon cancer*
- *do not have longstanding colitis*

The majority of people who develop colon cancer are in this average risk group

People who are at <u>average</u> risk for colon cancer are those who:

- *have no bowel symptoms*
- *are aged between 50 and 74*
- *have no family history of colon cancer*
- *do not have longstanding colitis*

These are the people for whom the new provincial screening program is designed

There are a couple of additional factors that influence the risk of developing colon cancer

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Males are more likely to develop colon cancer than females.

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There are a couple of additional factors that influence the risk of developing colon cancer

Males are more likely to develop colon cancer than females.

Both males and females of **African heritage** are more likely to develop colon cancer, possibly at an earlier age.

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Why is it important to find colon cancer early?

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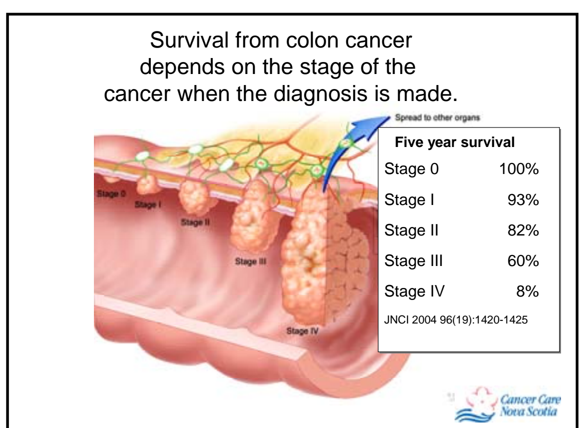
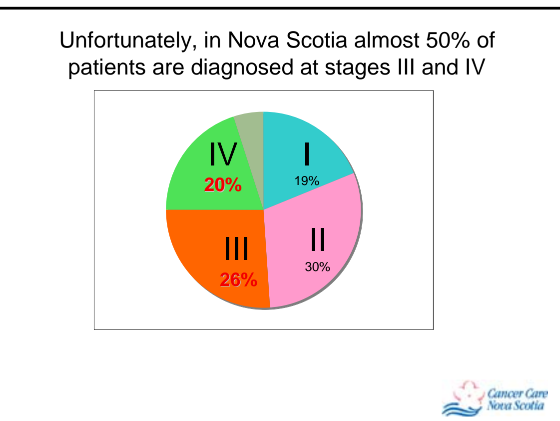
Survival from colon cancer depends on the stage of the cancer when the diagnosis is made.



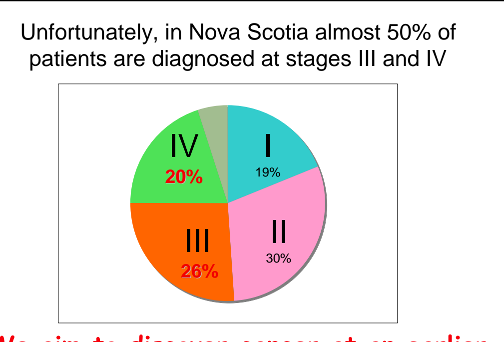
Five year survival	
Stage 0	100%
Stage I	93%
Stage II	82%
Stage III	60%
Stage IV	8%

JNCI 2004 96(19):1420-1425

Unfortunately, in Nova Scotia almost 50% of patients are diagnosed at stages III and IV



Unfortunately, in Nova Scotia almost 50% of patients are diagnosed at stages III and IV



We aim to discover cancer at an earlier stage when it is more likely to be cured

Some important facts:

Colon cancer differs from most other cancers…

- **It doesn't begin life as a cancer**
  but as a non-malignant polyp which may become malignant as it grows larger
- **It takes several years to undergo that change**
  and that allows time for polyps to be discovered before they become malignant, or before they cause any symptoms

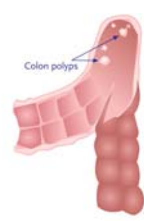


Illustration courtesy of Cancer Care Manitoba

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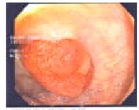
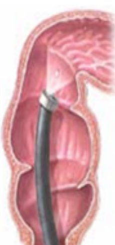
As polyps grow larger they tend to bleed small amounts of blood -- too little to be seen in the stool



Special tests can detect such very small amounts of blood in the stool.



*If blood is found in a stool sample, an examination of the colon (**colonoscopy**) can*

- *find and remove polyps that may later develop into cancer, and*
- *identify other causes of bleeding that require treatment.*

If colon **cancer** is found by a screening program <u>before</u> there are any symptoms, there is **a 90% probability of complete cure.**

So…***colon cancer can be prevented***

when pre-malignant polyps are identified and removed and can be

cured

when it is discovered at an early stage.

Cancer Care Nova Scotia
has been charged with the role of

designing a cancer prevention program
that profits from others' experience in similar programs

establishing performance standards
designed to reduce risk and encourage success

measuring the results of the program
to determine whether we are achieving the goals

assisting DHAs in fulfilling their roles
by offering assistance, sharing best practices

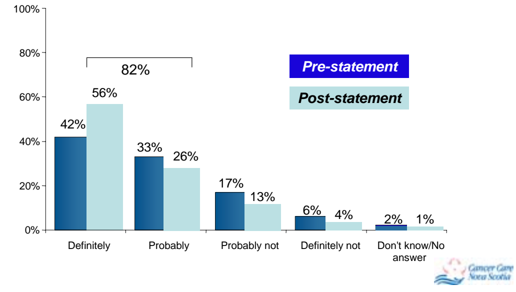
We have chosen to use a
fecal occult blood
screening program.

This is a test in which **feces**
(stool, bowel movements)
are tested for the presence
of **occult** (hidden) **blood**

Is there evidence that fecal occult blood screening is effective ?

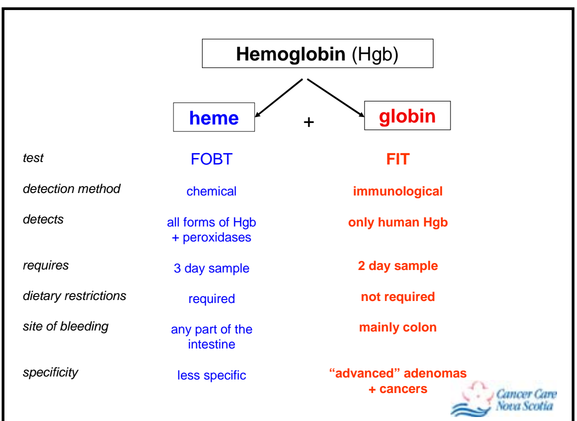
Reduce mortality?	**Yes**, 4 of 5 clinical trials
Reduce incidence?	**Yes**, 1 of 2 clinical trials
Cost effective?	**Yes**, all studies
Public acceptance?	**Yes** (up to 60%)

Most of the 1660 Nova Scotians interviewed are comfortable with the proposed screening test procedure. However, the likelihood of taking the test is increased after more information is given.



Traditional testing has used **chemical** methods of detecting hidden blood in the stool.

Nova Scotia's Colon Cancer Prevention Program has chosen to employ a new **immunologic test** that uses **specific antibodies against human blood.**



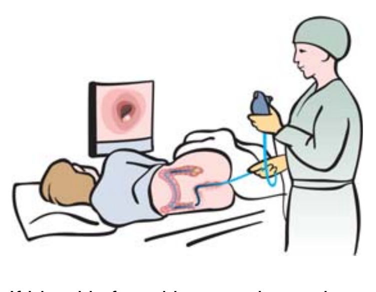
Hemoglobin (Hgb)

heme + **globin**

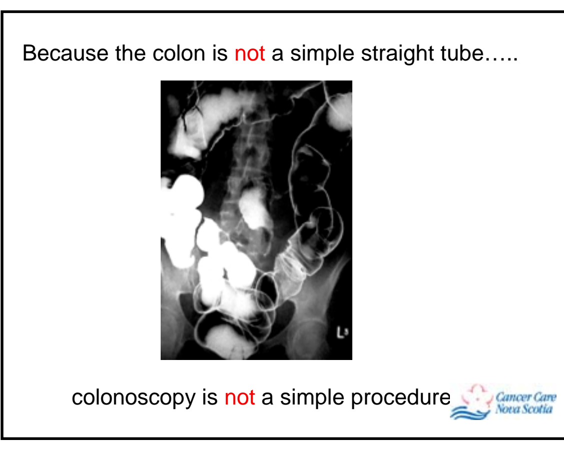
test	FOBT	FIT
detection method	chemical	immunological
detects	all forms of Hgb + peroxidases	only human Hgb
requires	3 day sample	2 day sample
dietary restrictions	required	not required
site of bleeding	any part of the intestine	mainly colon
specificity	less specific	“advanced” adenomas + cancers

Therefore…by choosing FIT

- No dietary restriction required
  (easier compliance)
- 2 days samples adequate
  (better acceptability)
- Centralized processing
  (better quality control)
- Detects more “advanced” polyps
  (more specific)



If blood is found in a stool sample
a detailed examination of the colon
(a colonoscopy) is recommended.

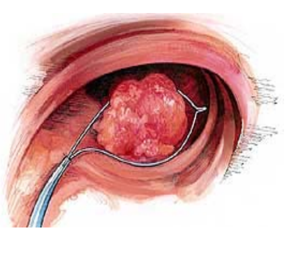


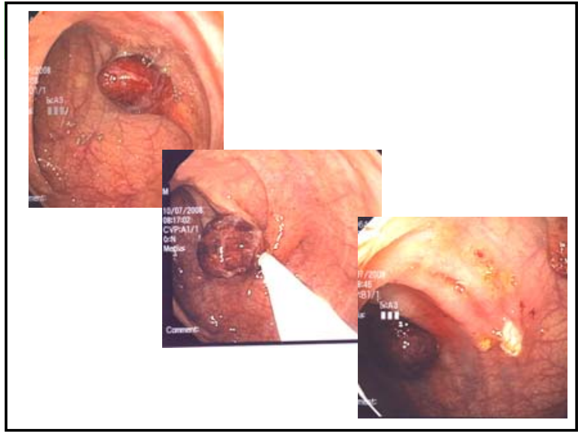
But, during a colonoscopy a skilled operator can

detect polyps

and can safely

remove them.





How safe is colonoscopy?

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How safe is colonoscopy?

Really -- it's very safe

Canadian study of 97,204 subjects in BC, AL, ON and NS

Bleeding	1 in 500 procedures
Perforation	1 in 1,000 procedures

Rabeneck L, et al. Gastroenterology 2008 Dec; 135: 1899.

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How can the relatively small risks be reduced?

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How can the relatively small risks be reduced?

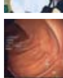
By having the procedure done by the most experienced colonoscopists

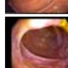
All of the colonoscopists who have been credentialed to take part in the Nova Scotia **Colon Cancer Prevention Program** have been selected from those who perform **200 or more colonoscopies each year.**

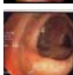
All participate in a program that monitors their endoscopic performance.

To ensure that colonoscopies are
safe and effective
we need to have:

An experienced endoscopist


A well-prepared, clean colon


Inspection of the entire colon


A meticulous, non-rushed examination

What about the tests used to interpret the polyps / cancers?

We have established a program of **quality assessment** designed to ensure diagnostic accuracy in the interpretation of pathology specimens,

and adopted a **standardized reporting template** to ensures that the pathology reports use diagnostic terms that conform to those used in the clinical guidelines.

How can we make the system more responsive?

We believe that the

DHA Screening Nurse

will be the answer!

The DHA Screening Nurse

Meets with each person who has an abnormal FIT.

Obtains relevant medical and family history
Explains colonoscopy procedure and preparation
Assesses fitness for colonoscopy
Refers those whose fitness is in doubt
Outlines risks *(bleeding, perforation, death)*
Provides special instructions for people with diabetes, etc
Obtains *initial* written standardized informed consent.

The DHA Screening Nurse

Facilitates System Management

Enters relevant demographic and medical information into the program's data base

Books colonoscopy for those considered fit

Refers those subjects whose fitness is in doubt

Sends all relevant information to colonoscopist

Informs family physician.

The benefits of the DHA Screening Nurse

***Eliminates** delays in obtaining appointments*

***Reduces** the interval between a positive test and subsequent colonoscopy (our aim < 6 weeks)*

***Ensures** that the benefits and possible risks of the procedure are presented in a standardized and explicit manner before an initial informed consent is sought.*

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What about other testing methods?

- Colonoscopy for all at average risk?
- CT colonography ("virtual colonoscopy")?

Currently in Nova Scotia:

34,000 colonoscopies are performed each year
There are 234,000 people between 50 and 74

If colonoscopy was offered as a screening test every 5 years to all those who are at average risk

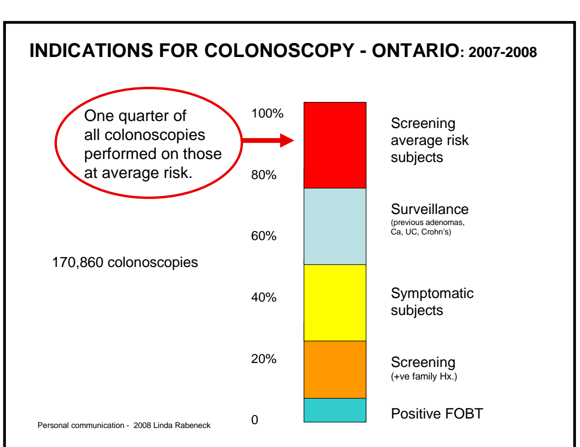
and 30% agreed to participate, this would cause a **40% increase** over the current load

and 50% agreed to participate, this would cause a **70% increase** over the current load.

'Primary' screening by colonoscopy for those at average risk is not advocated by any nationally funded health care system.

In the few Canadian provinces in which it is an acceptable option, it has produced a steadily increasing load.

INDICATIONS FOR COLONOSCOPY - ONTARIO: 2007-2008



Personal communication - 2008 Linda Rabeneck

It has been estimated that 'primary' screening by colonoscopy would require a 12-fold increase in the number of colonoscopists in Canada.

By contrast, 'focused' screening (only those with abnormal FIT) reduces the number requiring colonoscopy to 3 - 5% of the total tested.

Colonoscopy utilization

Many current colonoscopists were trained at a time when there were no scientifically validated guidelines for appropriate follow-up.

Colonoscopy utilization

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Validated Guidelines
are now available.

The most frequently found polyps are **hyperplastic**

We now know that these polyps are of ***NO*** *clinical significance and require* ***NO*** *further follow-up.*

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Each of these polyps requires a specific follow-up interval after they have been removed

Tubular adenoma <1cm

Tubular adenoma > 1 cm

No high grade dysplasia

Tubular adenoma with high grade dysplasia

Villous adenoma

Appropriate follow-up intervals after removal of adenomatous polyps range from

3 - 5 years

(3 years for adenomas > 1cm or with villous features; 5 years for 1 or 2 adenomas, each < 1 cm)

These follow-up intervals are longer than was the previous custom.

Winawer SJ et al. Gastroenterology 2006; 130: 1872 - 1885

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In an Australian study:

Adherence to accepted guidelines resulted in:

23% reduction of repeat procedures after previous **polypectomy**, and

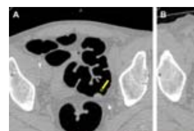
17% reduction in repeat procedures done for subjects with a **positive family history**

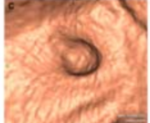
Med J Aust. 176, 155-157; 2002

So….

- Colonoscopy is not a cost-effective method for screening people at average risk for colon cancer.
- Colonoscopy services would become more accessible if accepted guidelines for follow up procedures were adopted throughout the province.

What about CT colonography ?
(“virtual colonoscopy”)





CT Colonography

- Has limited availability at present
- There are questions about increased radiation exposure
- It is expensive
- And, if used for primary screening would require a five-fold increase in the numbers of radiologists!

But it does have a role…

*The **Colon Cancer Prevention Program's** view:*

Although CTC should **not** be used as a primary screening modality,

CTC **does** have a role in investigating those people who
(a) have a positive FIT or
(b) are otherwise at increased risk
in whom complete colonoscopy was unsuccessful.

How will the program be introduced into the province?

There are approximately a quarter of a million Nova Scotians in the 'average' risk group (age 50 - 74).

If the program was introduced to all of them at once it would completely overwhelm the entire system.

So..

the program has been introduced initially to 3 (of the 9) District Health Authorities:

- *Cape Breton DHA*
- *South Shore DHA*
- *Guysborough-Antigonish-Strait DHA*

The remaining DHAs will join over the next 18 months.

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Distribution of test kits will be staggered

(based on a person's date of birth)

People born in an even year (e.g. 1950) will receive their kits in an even year (e.g. 2010)

People born in an odd year (e.g. 1953) will receive their kits in an odd year (e.g. 2011)

The kits will be mailed out shortly after the person's birthday.

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By spreading distribution over 2 years, 4% of the population at average risk in the DHA will be invited to participate each month. Initially, 500 - 700 kits each week.

However, this means that some people won't receive a kit for up to two years after the launch of the program in each DHA.

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Finally….

How will the program affect you if you are between 50 and 74 years old, you live in Nova Scotia,

and you have no symptoms or family history of colon cancer?

First…

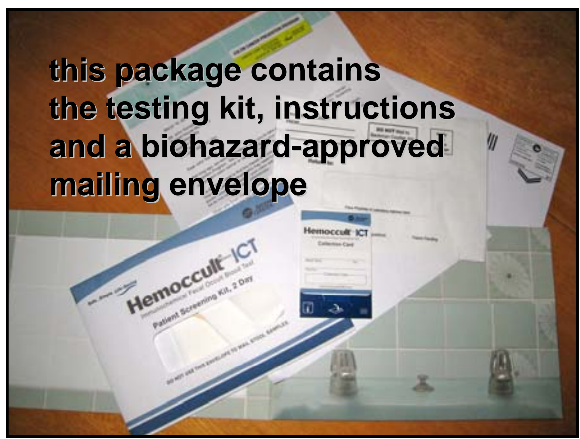
We hope you will see some advertising in the local media…

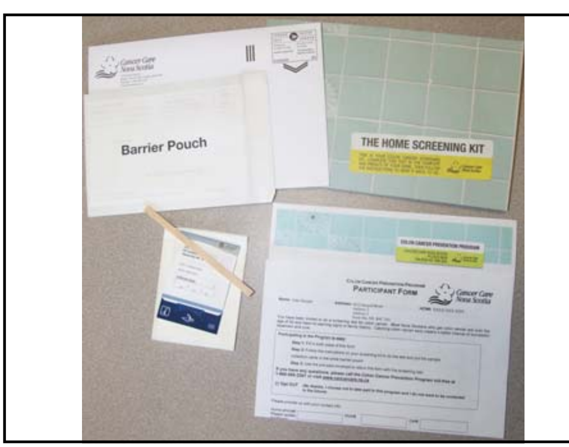
THIS ADVANCED MEDICAL FACILITY CAN SCREEN FOR COLON CANCER. IT'S ALSO WHERE GEORGE FLOSSES HIS TEETH.
Cancer Care Nova Scotia

SCREENING FOR COLON CANCER MAY SOUND COMPLICATED BUT YOU'VE BEEN PRACTISING HERE FOR YEARS.
OVER THE NEXT TWO YEARS CANCER CARE NOVA SCOTIA WILL BE MAILING COLON CANCER HOME SCREENING KITS* TO PEOPLE BETWEEN 50–74 YEARS OF AGE. THE KIT CAN BE USED IN THE COMFORT AND PRIVACY OF YOUR OWN HOME. IF DETECTED EARLY COLON CANCER IS CURABLE. FOR MORE INFORMATION CALL 1-866-599-2267 OR VISIT OUR WEBSITE.
www.cancercare.ns.ca
Cancer Care Nova Scotia

Then,
soon after your
birthday
you'll receive
this letter
in the mail ….
EVERYTHING YOU NEED TO KNOW ABOUT COLON CANCER SCREENING

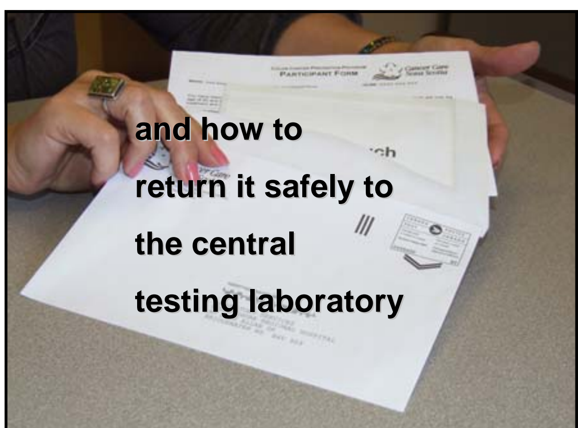
followed
2 weeks later…..
THE HOME SCREENING KIT


this package contains
the testing kit, instructions
and a biohazard-approved
mailing envelope
Hemoccult ICT
Patient Screening Kit, 2 Day


Barrier Pouch
THE HOME SCREENING KIT
PARTICIPANT FORM

BECKMAN COULTER
Jane Sample
65 Cobequid Road
Unit #1009
Sackville NS B4C 2N1
HCN: #9900012345
DOB: 1949/12/21
Collection Date:
IVD
BECKMAN COULTER
John Sample
65 Cobequid Road
Unit #1004
Sackville NS B4C 2N1
HCN: #5000012345
DOB:1944/12/26
Collection Date:
IVD

You will be told how to use the testing kit



If a completed kit is not received at the testing laboratory within 6 weeks, we will send you a reminder letter.

A normal test result letter will include the advice to repeat the test 2 years later
(when the system will automatically generate another invitation)

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A normal test result letter will include the advice to repeat the test 2 years later
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In the interim, seek medical advice if you develop any persistent bowel symptoms.

The most common symptoms of colon cancer are:

- *blood on or in the stool*
- *persistent abdominal pain*
- *change in bowel habit lasting for more than a few weeks.*

Nova Scotia's Colon Cancer Prevention Program has just begun!

The first invitations and kits were mailed within the past 3 weeks

These are some of the questions we have been asked:

Are there any lifestyle factors that can influence the chance of getting colon cancer?

Smoking
Obesity
Diet

Vit. D
NSAIDs

How do you know to send me a kit?

- we receive contact information and birthdate from MSI for people in our screening age group

If your contact information is not up-to-date you can help us by calling

MSI toll-free at ***1-800-563-8880***

What if I do not want to be sent a kit?

You can opt out of the program by:

- ticking the "OPT OUT" box on the participant form

- call us toll-free at **1-866-599-2267**
(we'd like to know why)

What information does the program keep?

- information on the Participant Form that is sent with the kit (e.g. have you been screened before, ethnic/cultural group, family history of colon cancer,etc.)
- FIT results so that we know who needs more tests
- results of any added tests (e.g. colonoscopy)

We follow the *Cancer Care Nova Scotia* Privacy Policy

All of this information will help us to improve the program over time

Cancer Care Nova Scotia

Why are you mailing home screening kits to people between the ages of 50 and 74?

- the screening kits are for people who are at average risk
- most people who are at average risk and who get colon cancer are over the age of 50
- the scientific evidence does not support the organized screening of people over the age of 74

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My husband just got his kit in the mail but I haven't got one yet. When will mine come?

Kits are being mailed out according to birthdate.

- people born in even years will be sent their kit shortly after their birthday in even years
- people born in odd years will be sent their kit shortly after their birthday

Should I do the test if I have already had one of the 'regular' stool tests?

- there are no risks in completing the FIT
- screening is most effective when done regularly

I don't want to wait until my DHA gets involved in the program.

Can I get a FIT from my doctor or pharmacy?

- The FIT is available only through the program
- If you have concerns, your Dr can recommend the best test for you (for example, a 'regular' stool test)

Should I do the test if I have had a colonoscopy in the past year?

- there are no risks in completing the FIT

… it is up to you.

What about if I have had colon cancer in the past?

- there are clear guidelines for follow-up which you should discuss with your doctor

(However, there are no risks in taking the FIT)

If my FIT result is abnormal… do I have cancer?

- the blood may be a result of a number of things such as polyps, hemorrhoids or other minor abnormalities
- probably only 10 – 20% of those with abnormal FIT results will be found to have colon cancer

I have read all of the material you sent me, but I still have questions about how to complete the kit. What should I do?

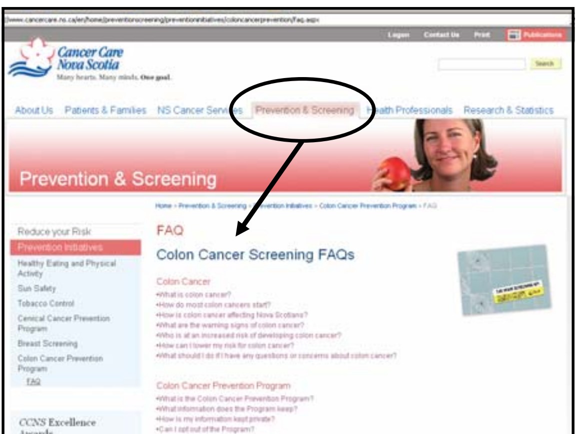
call us toll-free at 1-866-599-2267 and speak with our Screening Access Project Officer

I have read all of the material you sent me, but I still can't make up my mind. What should I do?

- talk with your health care provider
- take your time to think it over …

You can go to our website:

www.cancercare.ns.ca



or you can call us at:

1-866-599-2267

Remember…

colon cancer* can be *prevented

when pre-malignant polyps
are identified and removed
and can be

cured

when it is discovered at an early stage.

However - a single screening test does NOT detect all polyps or cancers

Therefore…

testing for occult blood must be repeated every 2 years.

The Colon Cancer Prevention Program

has begun!

We hope that it will achieve its major aim of reducing the burden of colon cancer in Nova Scotians